



A.D. 1868, 6th JANUARY. N° 45.

SPECIFICATION

OF

JAMES GARDNER.

PROJECTING LIQUIDS IN THE FORM OF
SPRAY.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO HER MAJESTY'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.

1868.





A.D. 1868, 6th JANUARY. N^o 45.

Projecting Liquids in the Form of Spray.

(This Invention received Provisional Protection only.)

PROVISIONAL SPECIFICATION left by James Gardner at the Office of the Commissioners of Patents, with his Petition on the 6th January 1868.

I, JAMES GARDNER, of Number Forty-five South Bridge, Edinburgh,
5 in the County of Edinburgh, Surgical Instrument Maker, do hereby declare the nature of the said Invention for “PROJECTING LIQUIDS IN THE FORM OF SPRAY BY A DRAFT OR CURRENT OF AIR FORCED THROUGH PART OF THE LIQUID AND AN INSTRUMENT OR APPARATUS FOR SUCH PURPOSE,” to be as follows, videlicet :—

10 The instrument to be used for this purpose, which I call an air tube spray producer, consists of an elongated vessel, which I call the phial, and of a narrower tube in the interior of the phial. The phial tapers to a narrow nozzle, which I call the jet, the mouth of which is not entirely closed, but is so narrow that the liquid in the phial can in the
15 absence of atmospheric pressure upon it escape only by drops. At the opposite end of the phial, which I call the bulb, I prefer that the phial be of a bulbous shape for the purpose of attaching an india-rubber or other elastic tube to the phial by slipping it over the bulb, but it is not necessary that this end be of a bulbous shape. I prefer also that

Gardner's Apparatus for Projecting Liquids in the Form of Spray.

the phial should be narrowed at the bulb end so as to make the bulb narrower than the central part of the phial, but this is not essential. The bulb end is not closed, in the central part of the phial is a neck and mouth by which the liquids to be used are poured into the phial and which mouth can be closed with a cork or stopper. A tube open 5 at both ends, which I call the air tube, is inserted in the interior of the phial leading from the bulb towards the mouth of the jet, and terminating about one-fourteenth or one-sixteenth of an inch behind the mouth. The air tube is closely fixed to the edge of the bulb so as to make it of one piece with the phial, and close the phial at the 10 bulb, leaving the bulb open as the entrance to the air tube.

I proceed to describe the method of using the air tube spray producer, premising that some liquids may be of too great a consistency to be effectually acted on by my Invention. Any instrument or appliance for the forcible injection of air is attached to the bulb and 15 fitted to it so closely as to prevent the air which is injected into the air tube at the bulb from escaping before it enters the air tube. I prefer that the instrument or appliance used be attached to the bulb by a piece of india-rubber tubing or other elastic tubing slipped over the bulb, which tubing by its elasticity is attached to the phial with 20 a sufficient degree of closeness. The instrument which I prefer for being so attached to the bulb is that known as Richardson's india-rubber bellows, but any other instrument or appliance for the forcible injection of air will do. The liquid which is to be projected in the form of spray is put into the phial by its mouth; and in using the 25 Invention the phial should be held or placed so that the mouth of the air tube immediately behind the mouth of the jet is covered with the liquid. Air is then forcibly injected into the air tube by the instrument or appliance for the forcible injection of air attached to the bulb as aforesaid, so as to create a draft or current through the 30 air tube; and the effect of this is that the liquid in the phial mixes with the draft or current of air as the latter passes through it between the mouth of the air tube and the mouth of the jet, and is forced out at the mouth of the jet in a continuous stream of spray.

For the better description of my Invention I refer to the accom- 35 panying Drawing of a longitudinal section of the air tube spray producer. In that Drawing the parts marked with the following letters represent the following parts of the instrument or apparatus

Gardner's Apparatus for Projecting Liquids in the Form of Spray.

viz^t. :—A, the jet ; B, the bulb ; C, the mouth and neck ; D, D, the air tube ; and E, the mouth of the air tube.

I claim as my Invention the instrument or apparatus above particularly described, and the projection in spray, by means of an instrument or apparatus of that construction, of any liquid sufficiently limpid
5 to be acted upon by it in the manner described.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1868.

A.D. 1868, JAN. 6, N^o 45,
GARDNER'S PROVISIONAL SPECIFICATION.



Section

The drawing left with Provisional Specification is colored

Drawn on Stone by Malby & Sons

